

CLAIMS

1. A video transmitting apparatus for layered-coding and transmitting input video as a video stream of a base
5 layer and enhancement layer, the video transmitting apparatus comprising:

a first coding section that codes the base layer;
a calculating section that calculates divided regions in coding the enhancement layer; and
10 a second coding section that performs intra-frame coding on the enhancement layer for each calculated divided region.

2. The video transmitting apparatus according to claim
15 1, further comprising:

a first generating section that generates information related to a storing position of the coded enhancement layer for each calculated divided region;
and
20 an extracting section that extracts video data of a region of interest from the coded enhancement layer using the generated storing position information.

3. The video transmitting apparatus according to claim
25 1, wherein the calculating section calculates divided regions so that regions having same or similar motion vectors are the same region.

4. The video transmitting apparatus according to claim
1, wherein the calculating section calculates divided
regions so that a specific region in video is divided
5 into small regions.

5. The video transmitting apparatus according to claim
1, wherein the calculating section calculates divided
regions so that a size of each region becomes equal to
10 a detection result of an object.

6. The video transmitting apparatus according to claim
1, wherein the calculating section calculates divided
regions so that a central part of a screen is divided
15 into small regions.

7. The video transmitting apparatus according to claim
1, further comprising an acquiring section that acquires
information related to a region of interest,
20 wherein the calculating section calculates divided
regions using the acquired information relate to the
region of interest.

8. The video transmitting apparatus according to claim
25 1, further comprising a first transmitting section that
transmits information related to the calculated divided
regions.

9. The video transmitting apparatus according to claim
1, further comprising:

5 a second generating section that generates decoding
region information indicating a region that requires
decoding to decode the coded enhancement layer in the
coded base layer; and

a second transmitting section that transmits the
generated decoding region information.

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10. The video transmitting apparatus according to claim
9, wherein the second transmitting section stores the
generated decoding region information in a user region
of the coded base layer and performs transmission.

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11. A video receiving apparatus for receiving a video
stream transmitted from the video transmitting apparatus
according to claim 1, the video receiving apparatus
comprising:

20 a first receiving section that receives a coded base
layer;

a first decoding section that decodes the received
coded base layer;

25 a second receiving section that receives a coded
enhancement layer;

a second decoding section that decodes the received
coded enhancement layer;

a first synthesis section that synthesizes the decoded base layer and the decoded enhancement layer; and

5 a display section that displays the synthesis result of the first synthesis section.

12. The video receiving apparatus according to claim 11, for receiving a video stream transmitted from the video transmitting apparatus according to claim 8, the
10 video receiving apparatus comprising:

a third receiving section that receives transmitted divided region information;

15 a second synthesis section that synthesizes the received divided region information with a decoded base layer; and

a setting section that sets a region of interest by a specification by a user,

wherein the display section displays a synthesis result of the second synthesis section on a same screen
20 or on a separate screen with the synthesis result of the first synthesis section.

13. The video receiving apparatus according to claim 11, further comprising:

25 a specifying section that specifies divided regions in coding the enhancement layer; and
a third transmitting section that transmits a

specifying result of the specifying section.

14. The video receiving apparatus according to claim
11, further comprising a receiving section that receives
5 the decoding region information,

wherein the first decoding section performs decoding
processing using the received decoding region
information.

10 15. The video receiving apparatus according to claim
14, wherein the first decoding section expands a region
included in the received decoding region information in
a direction of a motion vector, and performs decoding
processing using the expanded decoding region
15 information.

16. A video transmitting method of layered-coding and
transmitting input video as a video stream of a base layer
and an enhancement layer, the method comprising:

20 a first coding step of coding the base layer;
a calculating step of calculating divided regions
in coding the enhancement layer; and
a second coding step of intra-frame coding the
enhancement layer for each divided region calculated in
25 the calculating step.

17. A video receiving method for receiving a video stream

transmitted using the video transmitting method according to claim 16, the video receiving method comprising:

a first receiving step of receiving the coded base layer;

5 a first decoding step of decoding the coded base layer received in the first receiving step;

a second receiving step of receiving the coded enhancement layer;

10 a second decoding step of decoding the coded enhancement layer received in the second receiving step;

a synthesis step of synthesizing the base layer decoded in the first decoding step and the enhancement layer decoded in the second decoding step; and

15 a displaying step of displaying a synthesis result in the synthesis step.